

CLAIMS

1. A bone plating system comprising:
 - a bone plate having a top portion, a bottom portion, and an interior middle portion extending therebetween, the interior middle portion bounding a fastener-retaining passageway extending between the top portion and the bottom portion, the fastener-retaining comprising:
 - an upper portion having an inwardly projecting capture lip formed thereat, the capture lip having a first diameter;
 - a lower portion having an outwardly projecting undercut with a second diameter that is larger than the first diameter; and
 - at least one access channel extending through the capture lip so as to communicate with the lower portion;
 - a fastener comprising:
 - a shaft;
 - a fastener engager means extending from, disposed on or coupled with the shaft for engaging bone;
 - a head mounted on the shaft having a radially elastic member.
2. A bone plating system as in claim 1 further comprising a fastener engager comprising a thread.
3. A bone plating system as in claim 1 further comprising a fastener engager comprising a non-threaded engager.

4. A bone plating system as in claim 1 wherein the radially elastic member comprises:

a peripheral groove at least partially encircling the head or the shaft; and
a retention ring at least partially disposed within the peripheral groove,
the retention ring being resiliently movable between a constricted state and a
free state.

5. A bone plating system as in claim 1 wherein the radially elastic member comprises:

a fastener head fabricated from a highly elastic material allowing the
fastener head to be resiliently movable between a radially constricted state and a
free state.

6. A bone plating system as in claim 5 wherein the highly elastic material is Nitinol.

7. A bone plating system as in claim 5 wherein the highly elastic material is a biocompatible polymer.

8. A bone plating system as in claim 1 wherein the radially elastic member comprises:

a plurality of radially elastic wedge shaped slices spaced radially about
the head, the wedge shaped slices being resiliently movable between a
constricted state and a free state.

9. A bone plating system as in Claim 1 wherein the fastener has a drive member that is selectively received by a driver to guide and position the fastener.

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10. A bone plating system comprising:

a bone plate having a top, a bottom, and an interior portion bounding a retaining passageway extending therebetween, the retaining passageway comprising:

an upper portion having an inwardly projecting capture lip formed thereat, the capture lip having a first diameter;

a middle portion having a second diameter that is larger than the first diameter; and

a plurality of spaced apart access channels extending through the capture lip so as to communicate with the middle portion;

a fastener having peripheral groove at least partially encircling the fastener;

a retention ring at least partially disposed within the peripheral groove, the retention ring being resiliently movable between a constricted state and a free state, the fastener being configured to pass through the passageway of the bone plate so that the retention ring is disposed within the passageway;

a removal tool comprising a plurality of spaced apart prongs, the prongs being configured to be selectively received within the plurality of spaced apart access channels so as to radially inwardly constrict the retention ring when the retention ring is disposed within the passageway of the bone plate.

11. A method for at least partially removing a fastener that passes through a passageway in a bone plate and engages with a bone, the fastener having a retention ring disposed within the passageway of the bone plate, the method comprising:

radially inwardly constricting the retention ring; and

manipulating the fastener after the retention ring is constricted so as to withdraw the retention ring out of the passageway of the bone plate.

12. A method for at least partially removing a fastener that passes through a passageway in a bone plate and engages with a bone, the passageway being partially bounded by an inwardly projecting capture lip having a plurality of spaced apart access channels extending therethrough, and a fastener having a radially elastic compressible head, the method comprising:

passing a plurality of prongs through the access channels on the bone plate so that the prongs inwardly radially constrict the head to allow passage past the capture lip; and

manipulating the fastener after the fastener head is constricted so as to withdraw the fastener out of the passageway of the bone plate.

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13. A method for at least partially removing a fastener that passes through a passageway in a bone plate and engages with a bone, the passageway being partially bounded by an inwardly projecting capture lip having a plurality of spaced apart access channels extending therethrough, the method comprising:

providing a fastener having a retention ring disposed within the passageway of the bone plate below the capture lip.

passing a plurality of prongs through the access channels on the bone plate so that the prongs are radially inwardly constricting the retention ring; and

manipulating the fastener after the retention ring is constricted so as to withdraw the retention ring out of the passageway of the bone plate.

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